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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/684,900	10/14/2003	Norbert P. Kusters	14917.0231USU1/MS301905.0	3563
27488	7590	06/23/2006	EXAMINER	
MERCHANT & GOULD (MICROSOFT)			ABEL JALIL, NEVEEN	
P.O. BOX 2903			ART UNIT	
MINNEAPOLIS, MN 55402-0903			PAPER NUMBER	
			2165	

DATE MAILED: 06/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/684,900

Applicant(s)

KUSTERS ET AL.

Examiner

Neveen Abel-Jalil

Art Unit

2165

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) ☒ Notice of References Cited (PTO-892) | 4) ☐ Interview Summary (PTO-413) |
| 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) ☐ Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>10/14/03, 5/25/05</u> . | 6) ☐ Other: ____. |

DETAILED ACTION

Remarks

1. Claims 1-22 are pending.

Priority

2. Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 120, 121, or 365(c) is acknowledged and record in the file.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on 10/14/2003 & 5/25/2005. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Specification

4. The abstract of the disclosure is objected to because in the abstract, line 2, "is disclosed" should be deleted. Correction is required. See MPEP § 608.01(b).

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Objections

5. Claims 1, 5-6, 8-9, 11-15, 17-20, and 22 are objected to because of the following informalities:

In claims 1, 11, and 12, the recitation of “*for* maintaining”, “command *for*”, and “*for* moving” is intended use, never actually takes place, therefore renders any recitation claimed after not be given patentable weight. Claims should be amended to recite more direct and positive language such as “to maintain”, “that moves”, “command to”, or “comprising” or “including”. Appropriate correction is required.

Claim 12, lines 9 and 10, recite “thereby” is intended use, never actually takes place, therefore renders any recitation claimed after not be given patentable weight.

Claims should be amended to either delete the recitation of “thereby” or to state more direct language such as “to become” or “that becomes” or “to be free-space”.

Claims 18, 20, and 22, recite “is used to” is intended use, never actually takes place, therefore renders any recitation claimed after not be given patentable weight.

Claims should be amended to either delete the recitation of “used” or to state more direct language such as “table to record” or “table that records”.

Claim 1, 5-6, 8-9, 11-15, 17-20, and 22, all recite “if” in various location which is language that suggest optionally making the recitation following never actually having to take place since its optional and thus will not have any patentable weight if it never has to happen. Claims should be amended to recite more direct, firm language such as “wherein” or “when”.

As a result of the optional “if” in the introduction of claim 6, claim 6 never has to happen. And thus, claim 7 will not happen at all making it improper dependent claim.

Claim 7 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 6 recite the conditional “if the ...”, which in the case where there is no match would omit steps of claim 6 and thus claim 7 all together. A claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be constructed to incorporate by reference all the limitations of the claim to which it refers” (See 35 U.S.C. 112 fourth paragraph).

Claim 12, preamble presents “a snapshot” then later on in line 6, the recitation “a snapshot” is stated again making it unclear to the Examiner if this is a new instant being introduced or a reference made to the preamble “snapshot” thus lacks antecedent basis. Correction is required.

Claim 15, line 1, recite “a snapshot” again although already introduced previously in claim 12, line 6, of which claim 15 depends, therefore, making it unclear to the Examiner if this is a new instant being introduced or the same snapshot being referenced; Thus lacks antecedent basis. Correction is required.

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claims 1, and 11 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. That claims do not recite a practical application by producing a physical transformation or producing a useful, concrete, and tangible result. To perform a physical transformation, the claimed invention must transform an article of physical object into a different state or thing. Transformation of data is not a physical transformation. A useful, concrete, and tangible result must be either specifically recited in the claim or flow inherently therefrom. To be useful the claimed invention must establish a specific, substantial, and credible utility. To be concrete the claimed invention must be able to produce reproducible results. To be tangible the claimed invention must produce a practical application or real world result. In this case, there's no practical application to maintaining or moving data around and no disclosure to the field of application (i.e. The preamble is directed to merely maintaining or moving data and nothing more). Also, in this case, the claims fail to produce tangible output or real world result to the step of “passing down” or the recitation of “move from location” since no storage or presentation (of the passing down or the move) takes place to realize the functionality.

Claims should be amended to recite an output such as storing the “moved data” or “creation of differential file” or “access” of the “passing down”.

Does the move (i.e. copy-on-write) actually take place thus possibly leading to storage or receipt of data? There’s no indication to that effect.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 1, 11, 12, 15, and 17-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 12, line 8, and claim 15, line 4, and line 6, and claim 22, line 4, recite “its” which is indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear what is being referenced by “its”.

Claim 17 recites the limitation "the snapshot version" (singular) in various lines. There is insufficient antecedent basis for this limitation in the claim.

Claim 17 recites the limitation "the current actual location" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Claim 17 recites the limitation "the new current actual location" in line 7. There is insufficient antecedent basis for this limitation in the claim.

Claim 18 recites the limitation "the current actual location" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Claim 18 recites the limitation "the snapshot version" (singular) in various lines. There is insufficient antecedent basis for this limitation in the claim.

Claim 18 recites the limitation "the table" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Claim 19 recites the limitation "the current actual location" in various lines. There is insufficient antecedent basis for this limitation in the claim.

Claim 19 recites the limitation "the snapshot version" (singular) in various lines. There is insufficient antecedent basis for this limitation in the claim.

Claim 19 recites the limitation "the new current actual location" in various lines. There is insufficient antecedent basis for this limitation in the claim.

Claim 20 recites the limitation "the table" in lines 5 and 8. There is insufficient antecedent basis for this limitation in the claim.

Claim 20 recites the limitation "the current actual location" in lines 5 and 8. There is insufficient antecedent basis for this limitation in the claim.

Claim 20 recites the limitation "the snapshot version" (singular) in various lines. There is insufficient antecedent basis for this limitation in the claim.

Claim 20 recites the limitation "the new current actual location" in line 11. There is insufficient antecedent basis for this limitation in the claim.

Claim 21 recites the limitation "the snapshot version" (singular) in various lines. There is insufficient antecedent basis for this limitation in the claim.

Claim 21 recites the limitation "the current actual location" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 22 recites the limitation "the current actual location" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim 22, line 5, recite “that location” without any indication to which location the reference is being made (i.e. the current actual location, the new current actual location, or the original location). Correction is required.

Claim 22 recites the limitation "the version" in line 6. There is insufficient antecedent basis for this limitation in the claim.

10. Claims 1, and 11 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps with respect to applicant’s specification page 9, lines 2-9, page 10, lines 1-8, and Figure 1 are: pertaining to recitation of “passing down” without any prior mention of when or how was this snapshot taken or maintained or who triggers the passing down from what to location to another? And what’s the outcome or result of the passing down? Is it the write operation or copy operation or move operation?

11. Claim 1, preamble recite “**for** maintaining” and claim 11, preamble recite “**for** moving” both are intended use and does not cause any functionality to occur in the computer since it lacks combination with hardware to realize the functionality. The limitations following the phrase “**for**” describes only intended use but not necessarily required functionality of the claim. Limitations following the phrase “**for**” do not carry patentable weight, which cause the claims to appear as a series of non-functional descriptive material/data without any functional relation with

each other. Applicant is required to amend the claims so that the claim limitations are recited in a definite form.

If the body of a claim fully and intrinsically sets forth all of the limitations of the claimed invention, and the preamble merely states, for example, the purpose or intended use of the invention, rather than any distinct definition of any of the claimed invention's limitations, then the preamble is not considered a limitation and is of no significance to claim construction. *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305, 51 USPQ2d 1161, 1165 (Fed. Cir. 1999). See also *Rowe v. Dror*, 112 F.3d 473, 478, 42 USPQ2d 1550, 1553 (Fed. Cir. 1997) (“where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention, the preamble is not a claim limitation”).

There appears to be no nexus between the intended use of the preamble and the body of the claim in order to realize the functionality intended. The “the maintaining of differential snapshots of a volume” as recited in the preamble of claim 1 appears to be missing of the body of the claim.

Similarly, the “the moving a block” as recited in the preamble of claim 11 appears to be missing of the body of the claim.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 1-3, and 11-14 are rejected under 35 U.S.C. 102(e) as being anticipated by

Kusters et al. (U.S. Patent No. 6,473,775 B1).

As to claim 1, Kusters et al. discloses a method for maintaining a differential snapshot of a volume, the volume comprising a plurality of blocks, the method comprising:

passing down, by a file system to a differential snapshotter, a block copy command for a block move from a location A on the volume to a location B on the volume (See column 6, lines 27-44, wherein “location A.... to location B” reads on “C:\ ...to Z:\”).

As to claim 2, Kusters et al. discloses wherein the block copy command is associated with a defragmentation operation (See column 6, lines 20-26, wherein “defragmentation” reads on “allocation to free space”).

As to claim 3, Kusters et al. discloses wherein the snapshotter keeps a translation table (See column 6, lines 5-17, wherein “translation table” reads on “bit map” illustrating free or occupied space).

As to claim 11, Kusters et al. discloses a method for moving a block from a location A to a location B, the method comprising:

passing down, by a file system, a block copy command to a lower level driver (See

column 9, lines 26-30).

As to claim 12, Kusters et al. discloses In a data storage system comprising a file system and one or more disk volumes, each volume comprising a plurality of files and a plurality of blocks, wherein each file is implemented by a set of one or more blocks, wherein blocks currently implementing a file are occupied-space blocks and all other blocks are free-space blocks, a method for maintaining a snapshot of an original volume, the method comprising:

taking a snapshot of the original volume (See column 7, lines 10-15);

monitoring moves of occupied-space blocks in the original volume, wherein moving an occupied-space block comprises transferring its contents to a second block, which is one of the free-space blocks, the second block thereby becoming an occupied-space block, and the first block thereby becoming a free-space block (See column 6, lines 52-65);

monitoring writes of blocks in the original volume (See column 8, lines 38-54, wherein “monitoring” reads on “checking”); and

producing snapshot versions of blocks in response to read requests (See column 6, lines 44-51, wherein “versions” reads on “comparison” done at different time frame).

As to claim 13, Kusters et al. discloses wherein monitoring moves includes intercepting a block copy command passed down by the file system (See column 8, lines 60-67).

As to claim 14, Kusters et al. discloses wherein moves of blocks include moves that are associated with a defragmentation operation (See column 6, lines 20-26, wherein “defragmentation” reads on “allocation to free space”).

Allowable Subject Matter

13. Although no rejections in view of prior art are made with regards to the remaining claims (claims 4-10, and 15-22), no claims in this application will be indicated as allowable until after a response to this action has been reviewed, as to the fact that certain changes may not produce allowable claims.

Closest prior art of Record

14. Kusters et al. (U.S. Patent No. 6,651,075 B1) teaches support for multiple temporal snapshots of the same volume.

Selkirk et al. (U.S. Pub. No. 2002/0178335 A1) teaches dynamically changeable virtual mapping scheme.

Selkirk et al. (U.S. Patent No. 6,779,094 B2) teaches instant copy of data to additional physical storage.

Hitz et al. (U.S. Patent No. 6,289,356 B1) teaches write anywhere file system with many different snapshots that can be created for the same file system.

Armangau (U.S. Patent No. 6,434,681 B1) teaches snapshot copy facility for storage system permitting continued host read/write access.

Rangan et al. (U.S. Pub. No. 2004/0141498 A1) teaches snapshot processing in storage system.

Christian Czezatke & M. Anton Ertl. *Freenix 2000 USENIX Annual Technical Conference Paper*. Pp. 77-88 of the Proceedings. LinLogFS- A Log- Structured Filesystem For Linux. 2000.

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Neveen Abel-Jalil whose telephone number is 571-272-4074.

The examiner can normally be reached on 8:30AM-5:30PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey A. Gaffin can be reached on 571-272-4146. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Neeveen Abel-Jalil
June 20, 2006